

Export Diversification and Technological Improvement in Portugal

Manuel de Herédia Caldeira Cabral
Universidade do Minho

Five Trends and changes in trends

1. - Increase in the degree of openness and export performance
2. - Diversification of Export Markets.
3. – Decrease of the weight of traditional sectors
- 4 – Increase of High Technology Exports.
5. – Convergence of the Export Structure Exportações e Aumento do Comércio Intra-industrial

Theory and empirical studies.

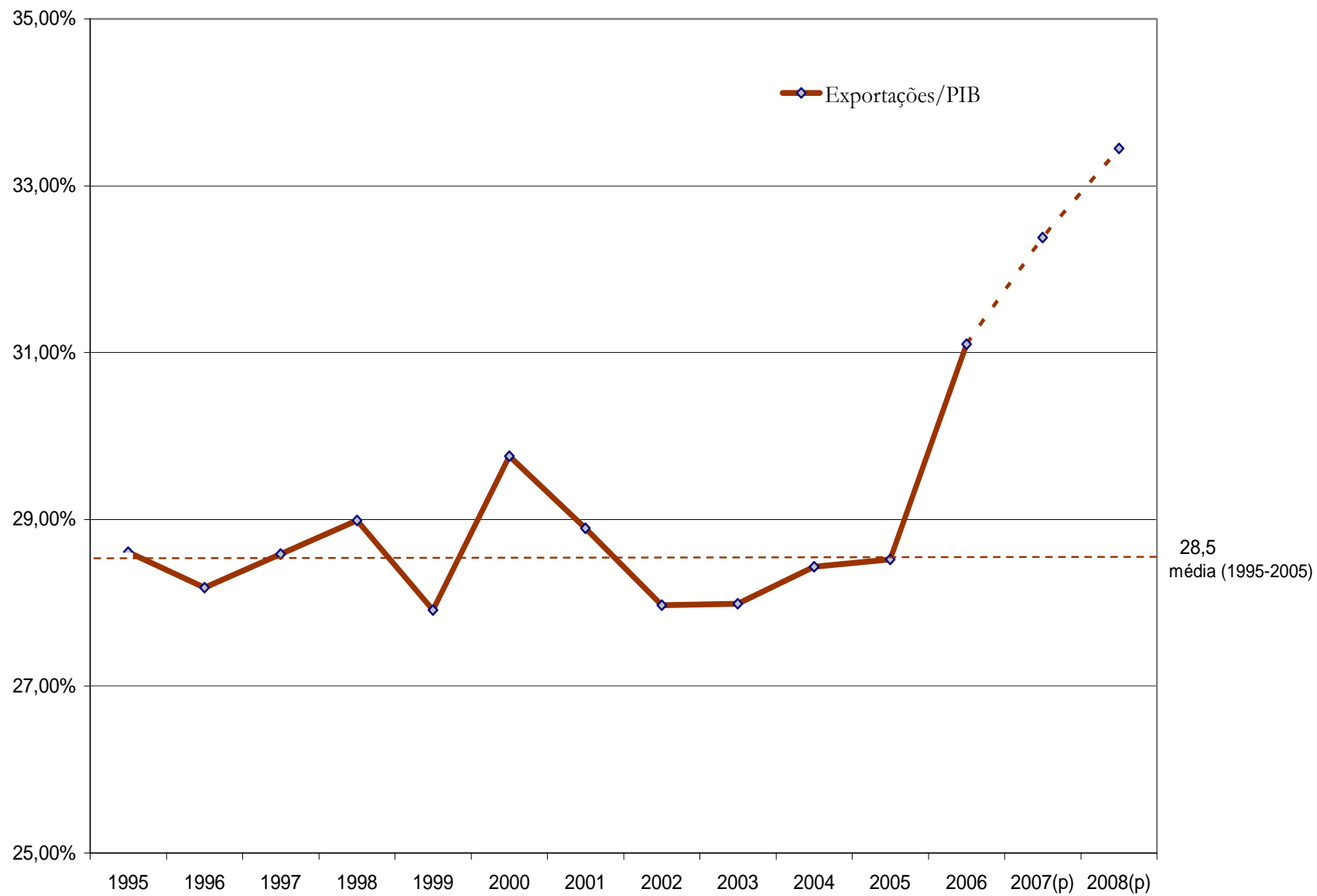
- Increase in openness, and in particular in the export capability (Exports/GDP) and higher growth rates. Edwards (1997), Baldwin (2003), (Ben David and Kimhi, 2004), Hallaert (2006).
- Integration and increase or decrease in specialization and attraction of scale economies and FDI sectors.
Amiti (1999), Redding (2002), Tingvall (2004), Cabral e Bastos (2007).
- Growth and sophistication or technological intensity of the exports.
Krugman (1987), Lucas (1988), Grossman and Helpman (1991) Redding (1999) Emp. Studies: Feenstra e Rose (2000), Kwan (2002), Hausman et al (2005), Lall et al (2005), Rodrik (2006) Crespo Cuaresma e Worz (2005).
- Convergence of the export structure and income and productivity convergence.
Rodrik (2006), Benedictis e Tajoli (2007)
- Increase in Intra-industry trade an pattern of integration of the Peripheral Economies.
(Krugman e Venables, 1995, Fujita et al., 1999).

1. – Increase in openness and export performance

Exports/GDP

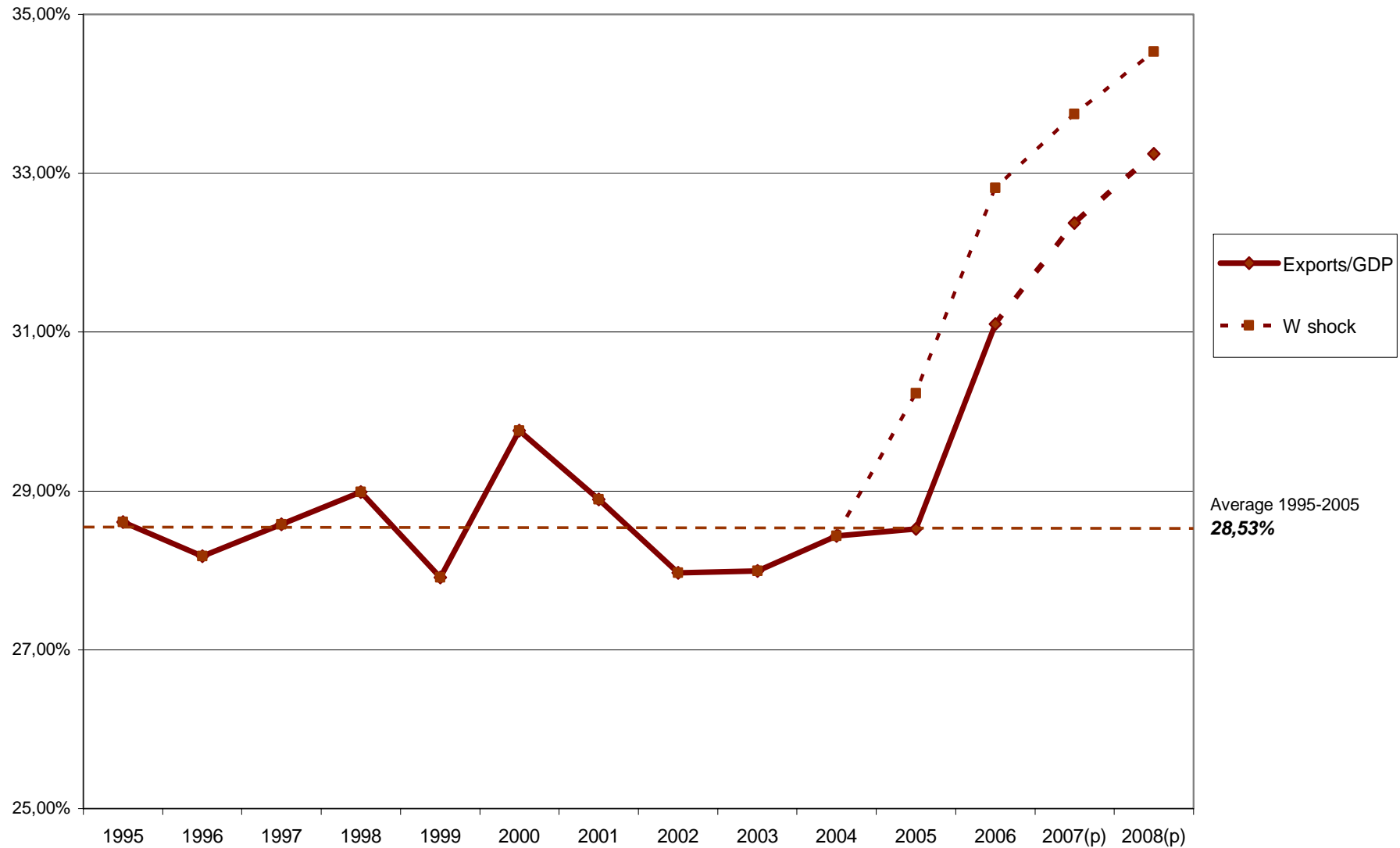
- Long Run Trend (1960-2000) of increase in openness.
- Interrupted between 2000 and 2005 (in which the ratio decreased).
- In 2005 the strong increase of the exports of new sectors resulted in only a small increase in the total exports due to the decrease in the exports of traditional sectors (effect of competition of Chinese products in the European markets).
- In 2006 and 2007 the Portuguese exports are growing well above the Portuguese GDP and even the GDP of the countries to which we are exporting (gains in market share).
- The predictions of international institutions point to the maintenance of an export lead growth in 2008.

Exports/GDP

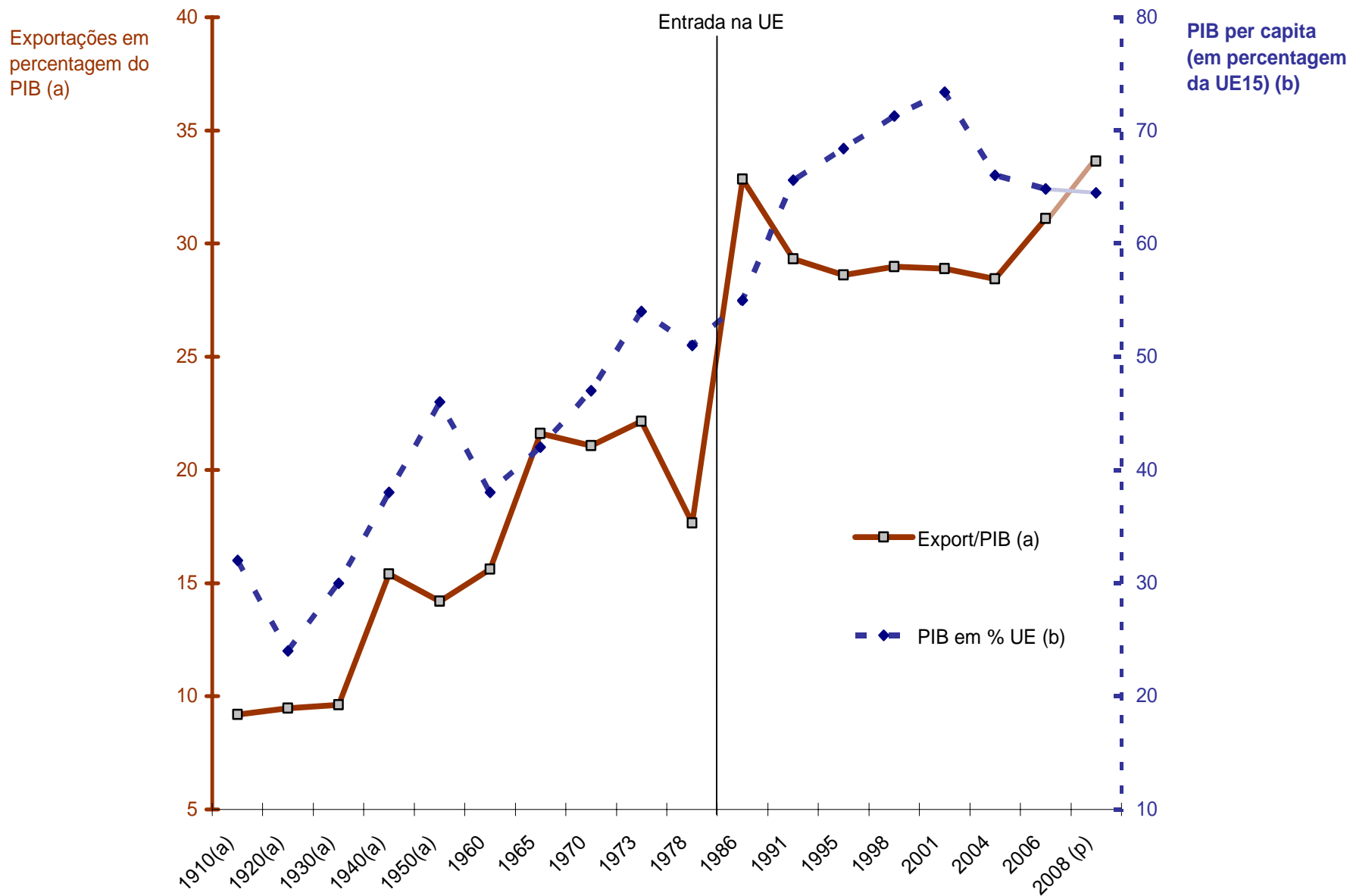


Exports/GDP

The effects of the decrease of the Low Tech exports in 2005



Exports/GDP and Portuguese GDP per capita PPP (% EU15)



1. – Increase in openness and export performance

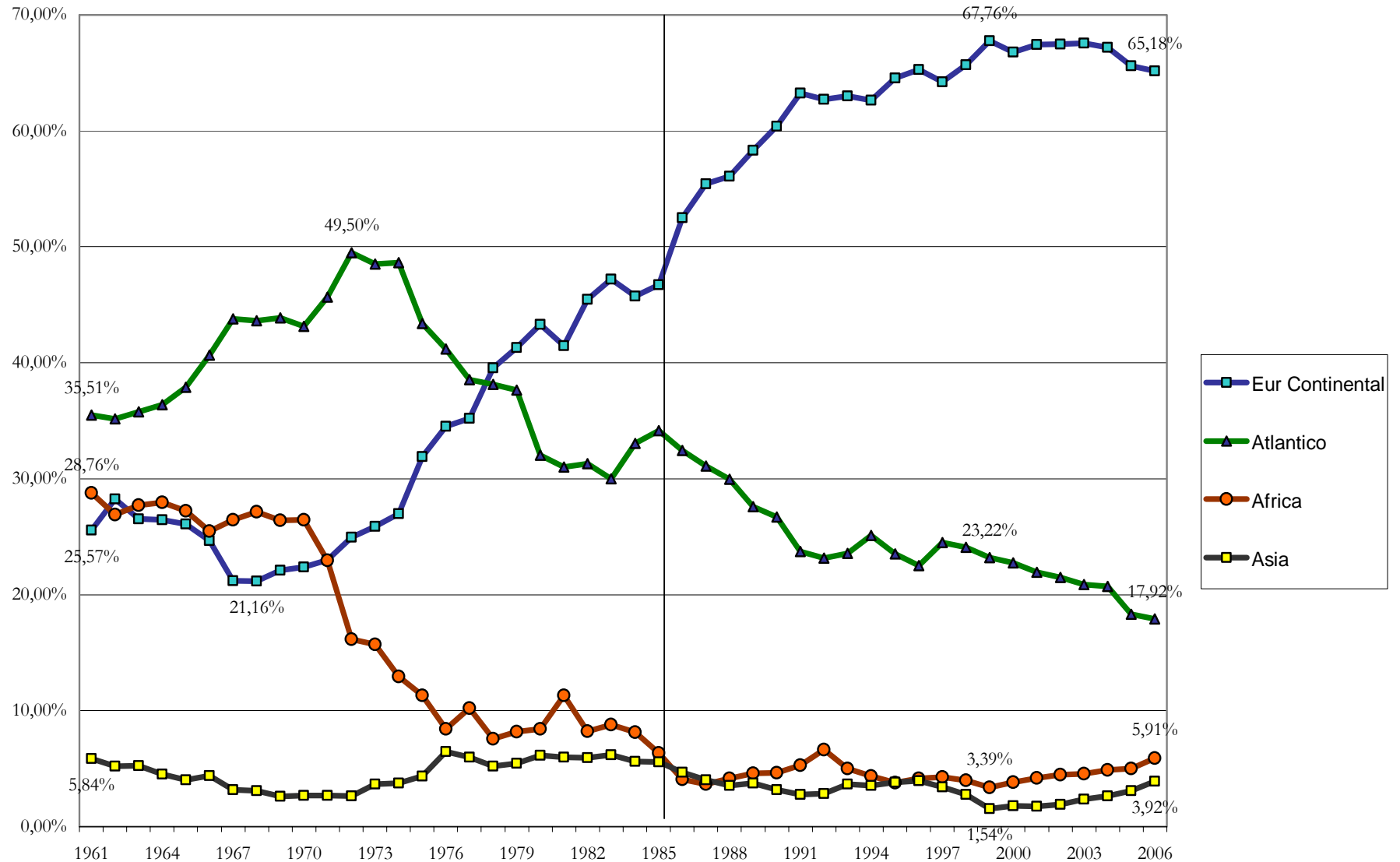
Exports/GDP

- Evidence suggests that periods of increase in the Exports/GDP ratio precede periods of convergence between Portugal and the European countries.
- Although the rate of growth of exports might decrease in 2007 and 2008 relative to the a the strong increase of 13,6% in 2006, the growth of the Portuguese exports should continue to be well above of that of the Portuguese GDP, specially if one includes both goods and services.
- The path of the recovery of the Portuguese exports may have started in 2005. The GDP to exports ratio should continue to increase in 2007 and 2008, and according to the new FDI projects might even continue to increase afterwards. So the strong increase of 2006 seems to be more than the result of an odd year, but as something included in an export lead growth cycle.

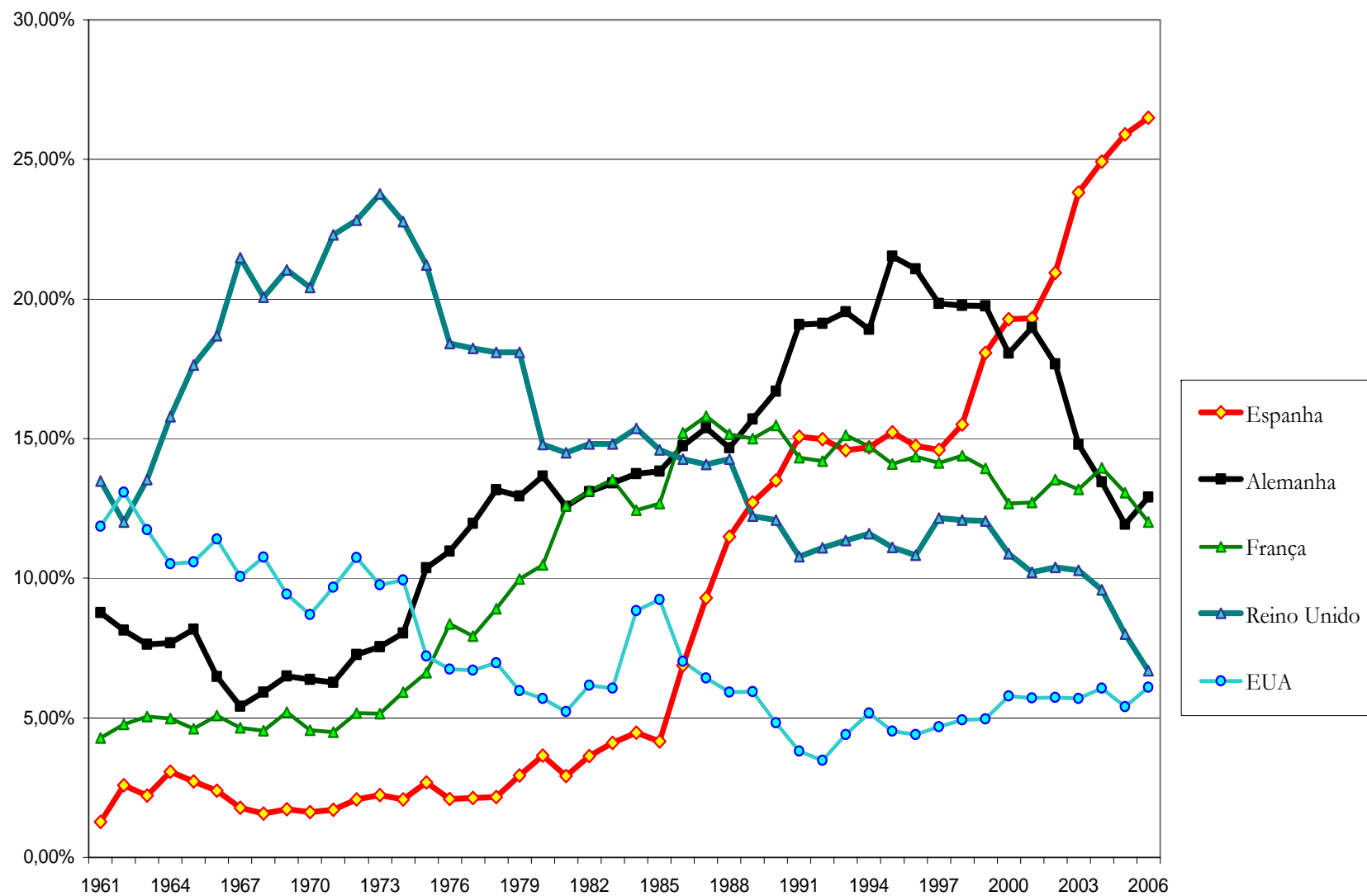
2. – Diversification of the Export Markets

- Long Run Trend of Concentration of Exports in the European Markets (1960-2000)
 - Continental Europe
 - European Union (63% to 84% -1981-2001)
 - Share of Spain
- Diversification, since 2000, more intense in 2006 and 2007.
 - Strong Increase in exports to extra-EU countries.
 - Share of EU in 2006 is the Lower since 1986.
 - Angola, USA, Singapore

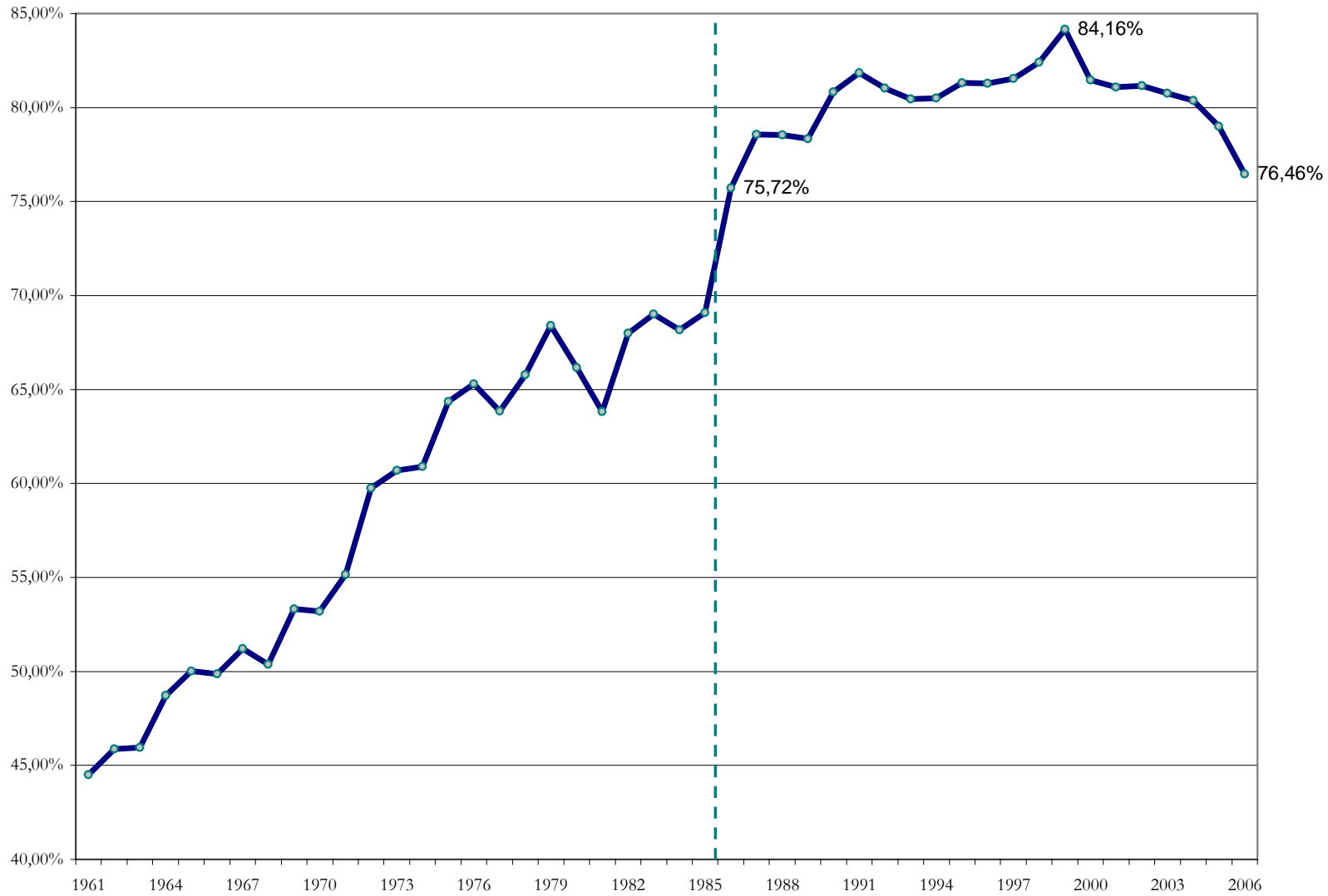
Shares of the Portuguese Exports of each Market: Concentration in the Continental European Countries



Share of Spain...



Share of the EU: Decreasing since 2000



3. – Change in the structure of the Portuguese Exports

- Strong structural change between 2003 and 2006. Portugal was among the three countries of the EU25 which had bigger changes in the structure of exports.
- Increase of Exports in Import competing sectors.
- Between 2003 and 2005 there was na important decrease of the exports of Portugal’s “traditional” exporting sectors. In 2006 the exports of these sectors grew but their share in total exports still decline. The decline in the share of these exports

Contributo do aumento das exportações para a alteração da Especialização

Pais	Alteração Líquida (Alteração-Reforço)	Alteração da Especialização Anterior (a)	Reforço da Especialização anterior (b)
1 . – Chipre	89,30%	94,65%	5,35%
2 . – Estónia	76,60%	88,30%	11,70%
3 . – Portugal	69,62%	84,81%	15,19%
4 . – Grécia	65,24%	82,62%	17,38%
5 . – Lituania	65,10%	82,55%	17,45%
6 . – Reino Unido	49,47%	74,74%	25,26%
8 . – Polónia	40,03%	70,02%	29,98%
10.- Espanha	39,34%	69,67%	30,33%
12. – França	26,30%	63,15%	36,85%
15. – Italia	-7,72%	46,14%	53,86%
16. – Hungria	-13,93%	43,04%	56,96%
18. – Republica Checa	-23,66%	38,17%	61,83%
19. – Holanda	-24,85%	37,57%	62,43%
20. – Finlândia	-30,54%	34,73%	65,27%
22. – Suécia	-51,04%	24,48%	75,52%
23. – Irlanda	-55,30%	22,35%	77,65%

(a) Proporção da Expansão que contribuiu para a **Alteração** da Especialização anterior.

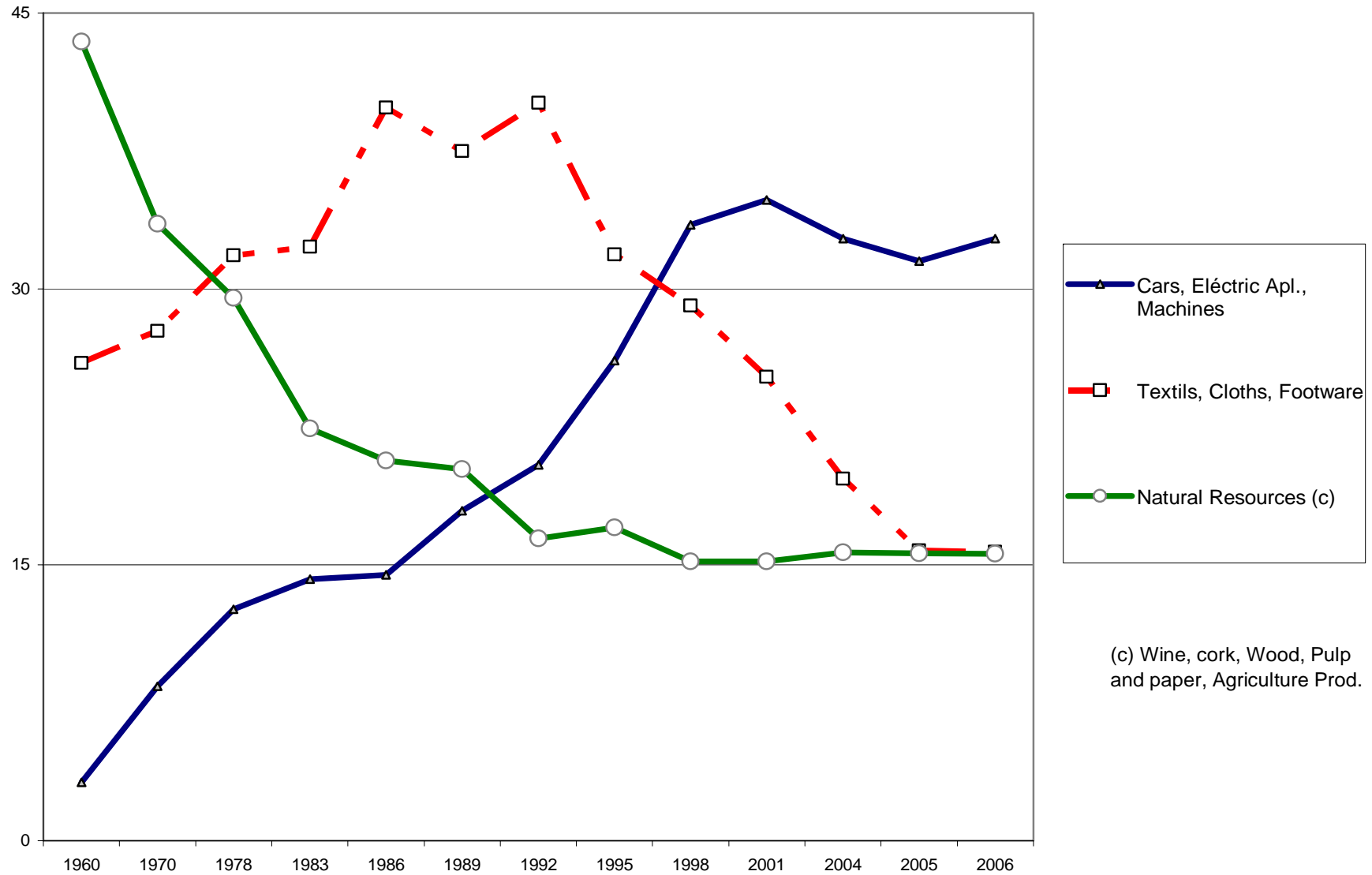
(b) Proporção da Expansão que contribuiu para o Reforço da Especialização anterior.

Contributo das diferentes componentes para a alteração da estrutura do comércio

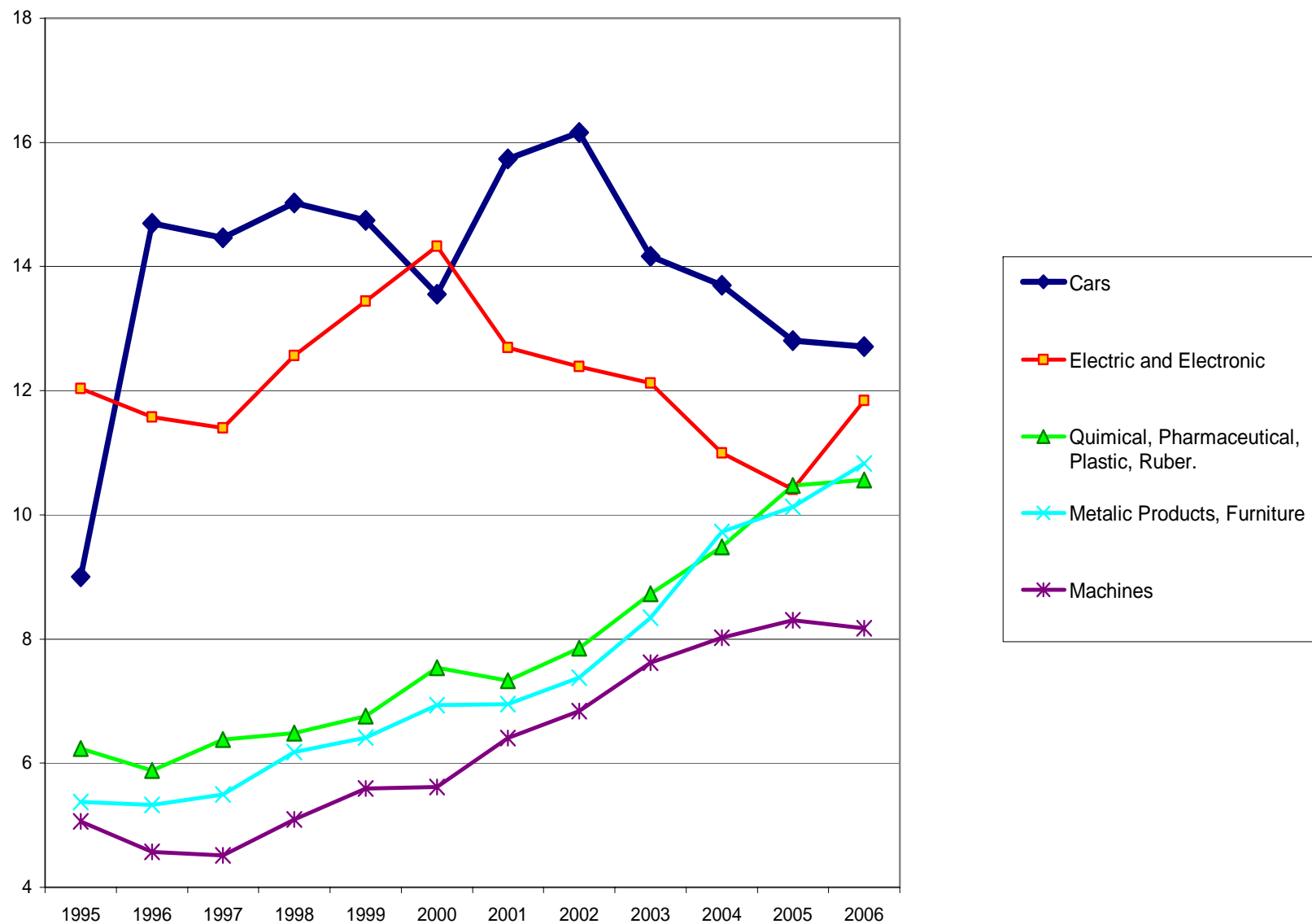
País	1. -Aumento	2. – Aumento de	3.- Diminuição	4.- Diminuição
	Exportações em	Exportações em	das Exportações	das Exportações
	Sectores	Sectores	em Sectores	em Sectores
	Importadores	Exportadores	Importadores	Exportadores
1 . – Chipre	102,18%	1,93%	-3,88%	-0,75%
2 . – Estónia	90,69%	11,20%	-0,94%	-0,94%
3 . – Portugal	101,82%	15,98%	-4,62%	-13,19%
4. – Grécia	97,46%	21,12%	-2,72%	-15,86%
5. – Lituania	88,43%	18,86%	-1,13%	-6,16%
6. – Reino Unido	77,25%	25,82%	-1,00%	-2,08%
8. – Polónia	70,22%	30,28%	0,00%	-0,50%
10.- Espanha	74,27%	32,22%	-2,05%	-4,44%
12. – França	70,70%	54,32%	-0,97%	-24,04%
15. – Italia	55,14%	55,37%	-9,81%	-0,70%
16. – Hungria	45,16%	59,44%	-2,77%	-1,84%
18. – Republica Checa	38,15%	61,98%	-0,03%	-0,13%
19. – Holanda	37,50%	63,20%	-0,10%	-0,60%
20. – Finlândia	36,54%	69,41%	-3,63%	-2,32%
22. – Suécia	26,44%	78,39%	-4,43%	-0,40%
23. – Irlanda	15,55%	108,21%	-6,34%	-17,41%

2003-2006 – Dados Eurostat

Change in the export structure since the 1960s



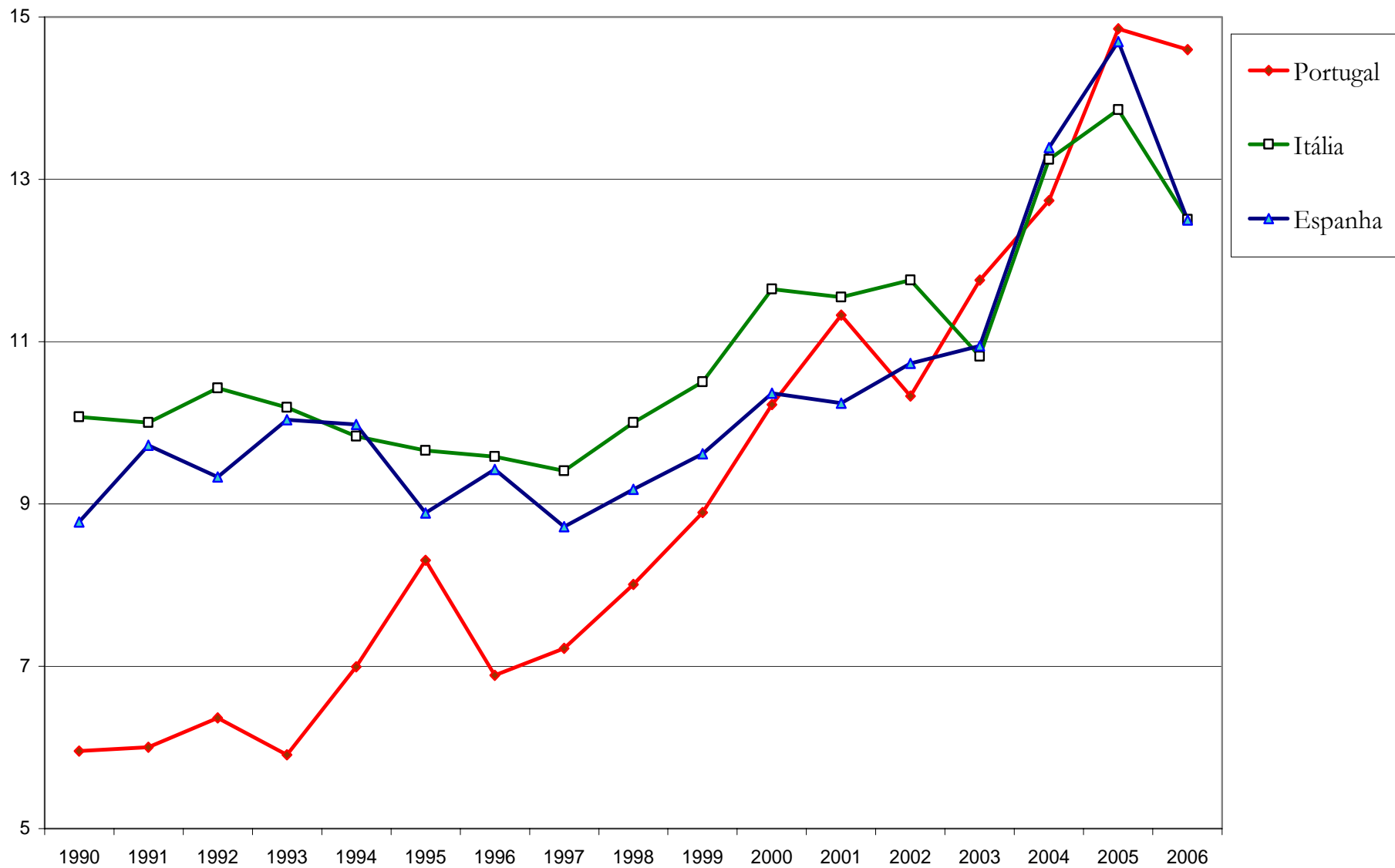
Change in the Export structure: Diversification of the export sectors



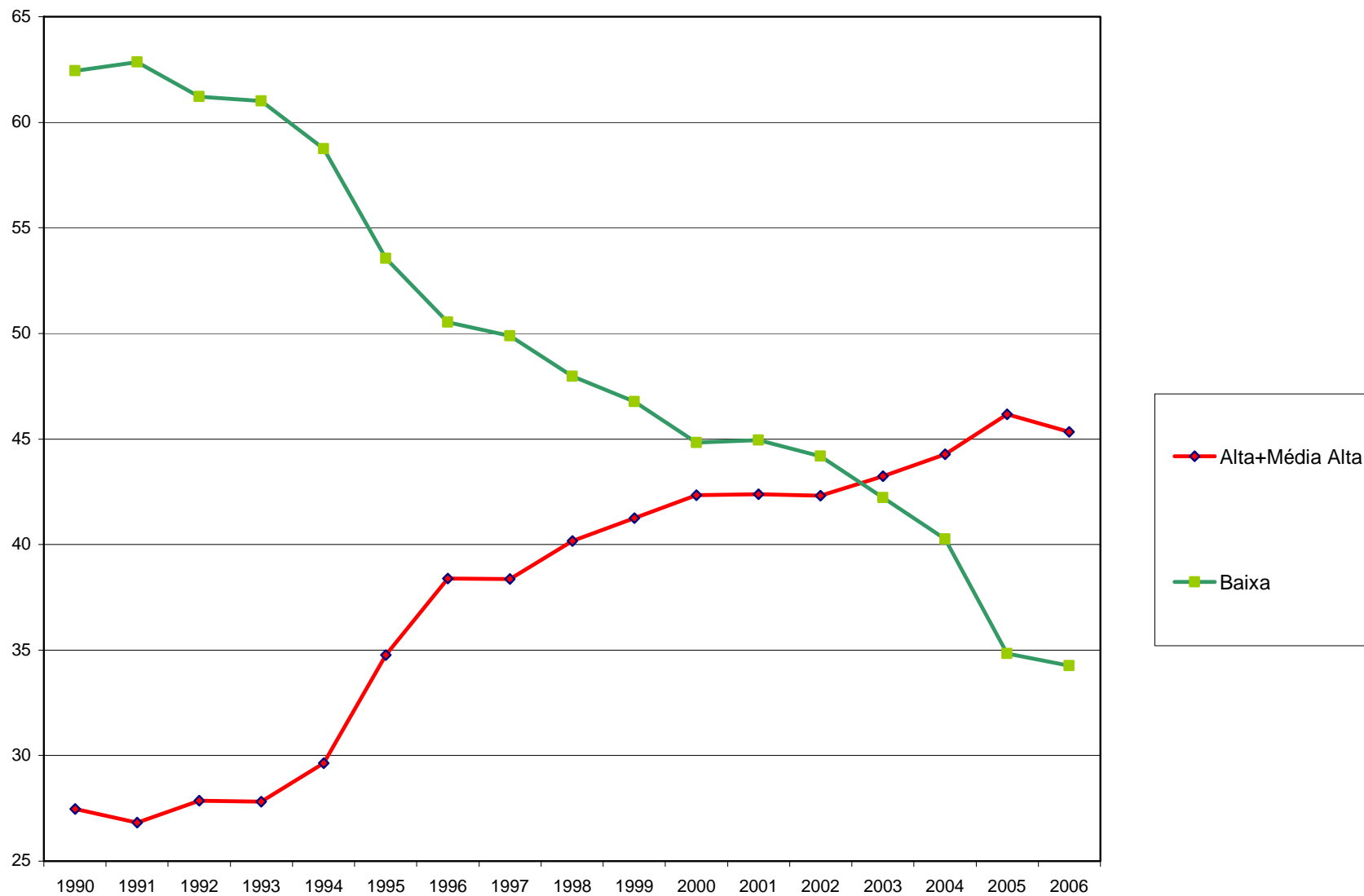
4. – Technological Improvement of the Portuguese Exports

- Strong increase in the exports of High Technology industries. Share of these industries in the Portuguese Exports surpassed that of Spain and Italy.
- The share of High Tech and Medium High Tech sectors surpassed that of the Low Tech sectors.
- Decline of the share of Low Tech sectors. Strong decline of the exports in 2005. Positive performance in 2006.
- In 2005 and 2006, the Portuguese exports of High Tech and Medium High Technological products had important market share gains.
- Important increase in the exports of Technological Services.

Share of the Exports of High Tech in the Manufacturing Exports.

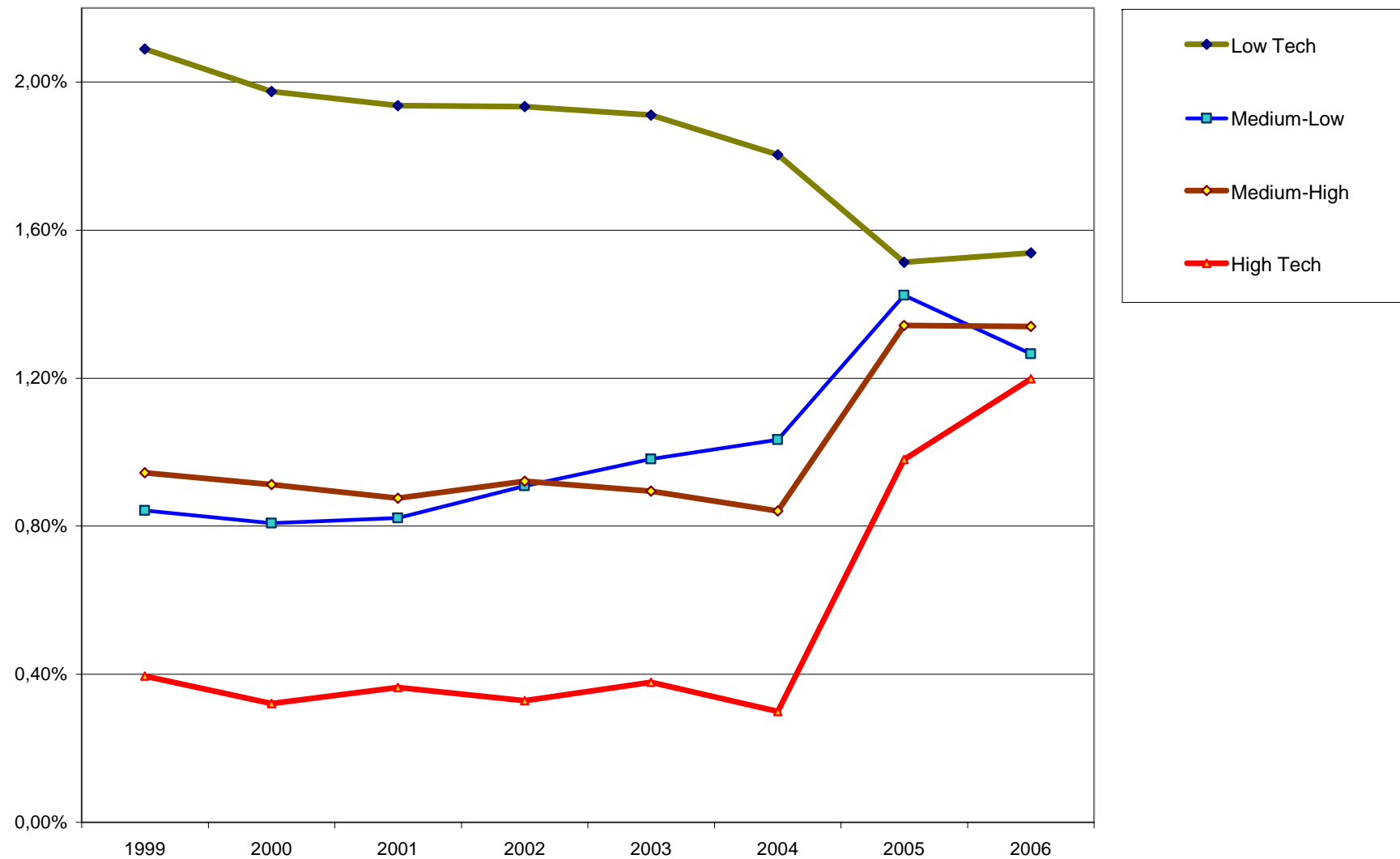


High Tech and Medium High Tech versus Low Tech: shares in total exports.



Market Shares of the Portuguese Exports in the EU25 imports (1999-2006)

Industries with different Technological Requirements.



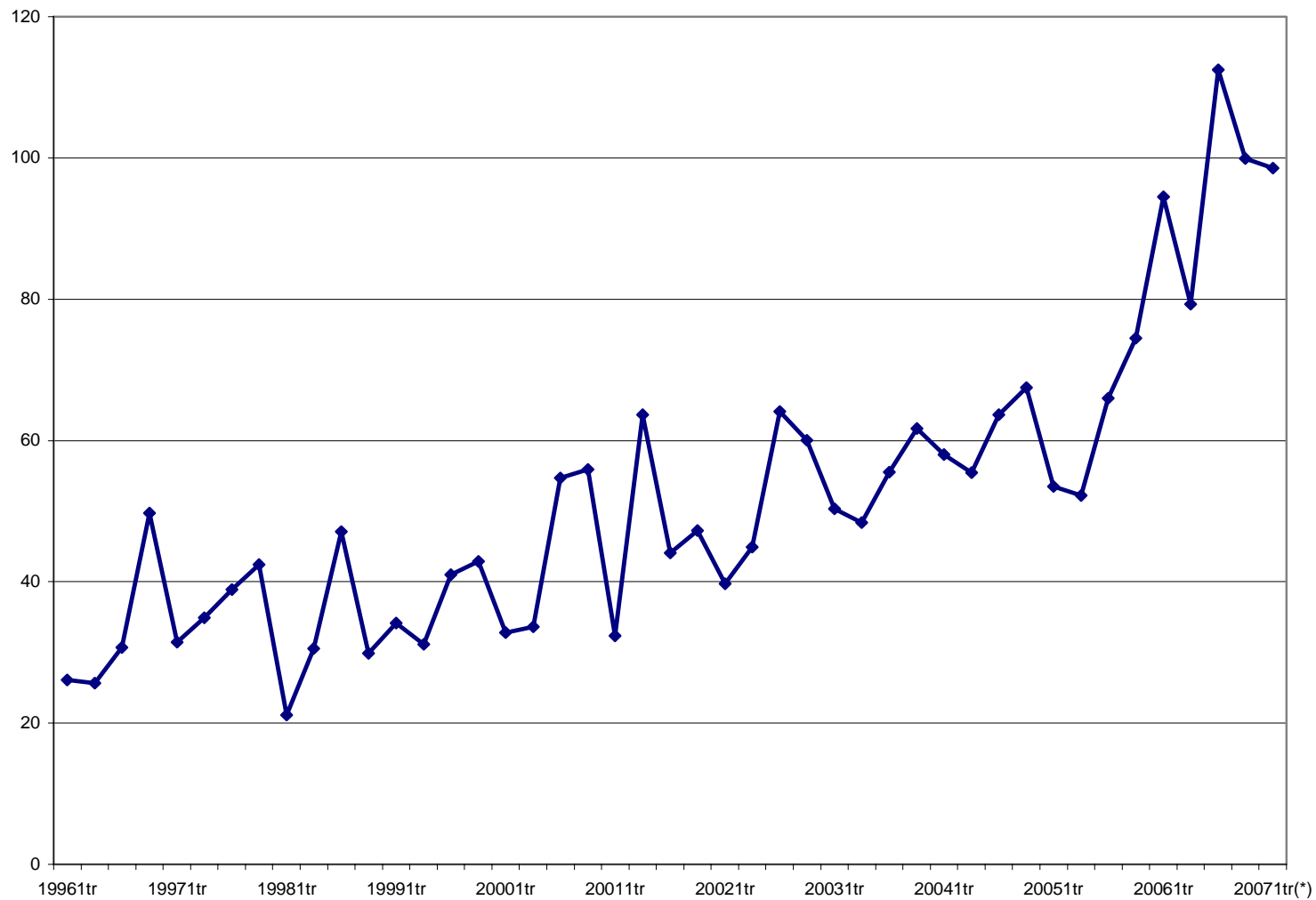
Contribution of each sector for the total growth of exports (2003-2006)

	Portugal	Spain	Italy	New	EU-25
TOTAL HIGH TECH (*)	63,7%	29,3%	29,9%	19,3%	47,8%
Pharmaceutical products	15,4%	32,1%	30,1%	9,3%	42,2%
Clerical equipment and computers	27,5%	-1,2%	-0,8%	-0,6%	6,5%
Radio, TV and communications equipment	26,0%	-0,7%	-1,1%	10,4%	-1,7%
Medical, optical and precision instruments	-5,3%	-0,9%	1,7%	0,2%	0,9%

(*) Excluding aeronautic and aerospace

Tecnologic Services: Exports/Imports

Taxa de cobertura - Balança Tecnológica



Fonte: Banco de Portugal

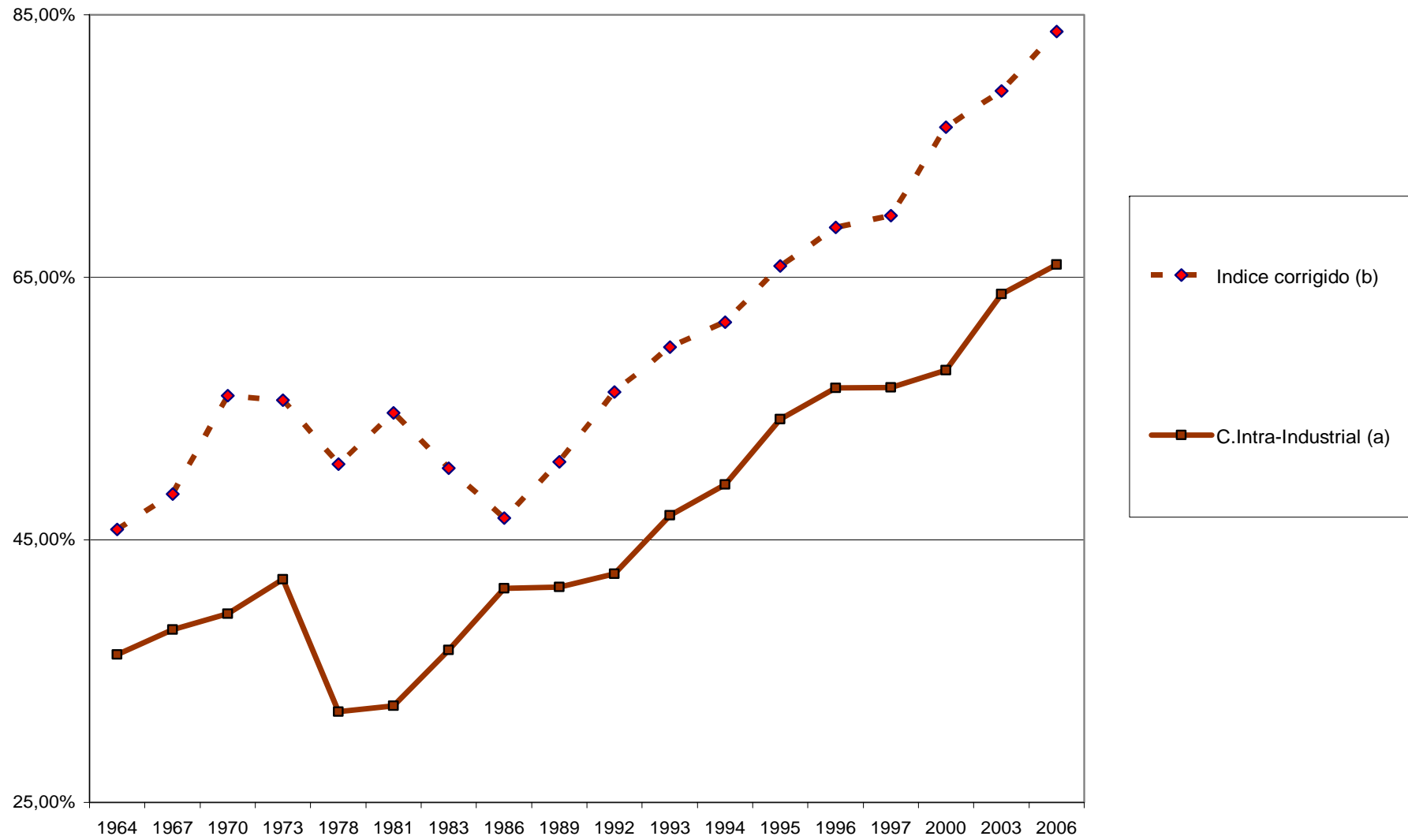
5. – Convergence of the Portuguese Export structure with that of the EU

- The average distance of the export structure was reduced to almost half the size since 1994.
- Tendência longa de convergência das estruturas de exportações. Acelerar nos últimos dois anos.
- FDI had na important contribute. The anounced projects suggest that FDI will continue to the convvergence of the export structure of Portugal in the next years.

Convergence of the Portuguese export structure with that of the EU

	Average Distance of Portugal to Euro Zone				
	1994	1997	2000	2003	2006
Indicator (a)	46,88	38,85	34,61	31,94	28,64
Variation		-17,14%	-10,90%	-7,74%	-10,30%
Indicator (b)	0,21	0,18	0,16	0,14	0,12
Variation		-11,56%	-12,66%	-13,99%	-13,24%

Increase in the share of Intra-industry trade (GL index)



Summary and Conclusions.

- Increase in the Openness and Export Performance. Trend interrupted from 1995 to 2005 – Recovery in 2005/06 and 2006/08.
- Diversification of Export Markets

Change in the former long run trend of concentration of the exports in the EU Market. Since 2000. Stronger in 2005/06 and 2007.

Summary and Conclusions.

- Important Changes in the Export Structure (while increasing)
- Decrease of the share of Low Tech Products.
 - Competition of East Asia.
 - Some recovery in 2006.
- Increase in the Technological intensity of the Exports.
 - Stronger than in other Southern European Countries.
 - Goods and Services.
 - FDI

Summary and Conclusions.

- Convergence of the Export structure, Technological Improvement, and productivity and income convergence.
- Increase in Intra-industry trade and convergence of the Peripheral economies.
 - Geography and trade models.
 - Spillovers, economies of scale and Technology transfers.

Different factors affect growth: Trade; Technological improvements; Qualifications; institutions, Investment

Conclusions: Risks and Opportunities.

- Increase of the exports still very dependent of a small number of Markets, Namely Spain, Germany, USA, Angola. Exposed to demand shocks in these countries.
- Evolution of unit labour costs is not favorable.
- Exchange rate Dollar/Euro might difficult the Portuguese Exports.

Conclusions: Risks and Opportunities

- Increase in the FDI and the structure of the FDI suggests that the pattern of change in the exports structure and specialization is going to continue in the next years.
- The technological improvement of the portuguese exports should contribute to increase productivity.
- Adjustment costs. More capital intensive sectors (less employment); Skilled versus Unskilled labour; Regional problems (the North of Portugal).